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WONG, ALLEN C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/762,736	LAINEMA ET AL.	
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _18 December 2008_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _33-41_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _33-41_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _21 January 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/08 has been entered.

Response to Arguments

2. Applicant's arguments filed 12/18/08 have been fully read and considered but they are not persuasive.

The objection to claim 39 is removed since the claim ends with a period.

Regarding lines 19-25 on page 5 of applicant's remarks, applicant states that there is no motivation to combine the teachings of Nieweglowski and Yagasaki. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of

Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements, as suggested in Yagasaki's column 3, lines 54-61.

Regarding lines 3-5 on page 6 of applicant's remarks, applicant states that Nieweglowski does not mention "receiving information indicating a motion coefficient quantizer", "accuracy", "quantizer" or "quantization". The examiner respectfully disagrees. In figure 5, Nieweglowski discloses the motion field coder discloses the "motion coefficient" data produced in motion field coder that includes data with quantization or QR values determined. See line 14 on page 8 to line 9 on page 9. Thus, Nieweglowski discloses receiving information indicating a motion coefficient quantizer.

Although the term "quantizer" is not explicitly stated in the reference, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. In figure 5, Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems. Thus, Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems.

Nieweglowski does not disclose determining the accuracy of the motion coefficients. However, in column 13, lines 24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data. Thus, Yagasaki discloses determining the accuracy of the motion coefficients. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements, as suggested in Yagasaki's column 3, lines 54-61.

Regarding lines 15-16 on page 6 of applicant's remarks, applicant states that Nieweglowski does not disclose the concept of quantization. The examiner respectfully disagrees. The concept of quantization is considered to be inherent in the art of MPEG video encoding/decoding standard in that during the encoding of images, discrete cosine transform is performed to differentiate the DC coefficients and the AC coefficients, then the quantization is applied to quantize the video data (ie.DC coefficients) into a format for preparation for variable length coding or entropy coding for transporting the compressed video data to the decoder terminal for high quality image display. Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video

image data for efficiently encoding, decoding and displaying video image data in an accurate manner. In figure 5, Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems. Thus, Yagasaki also discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems. Thus, quantization and quantizers are inherent in MPEG video encoding standard.

Regarding lines 16-18 on page 7 of applicant's remarks, applicant asserts that Nieweglowski does not textually disclose quantizer information. Again, the examiner has already explained this issue in the above paragraphs and in the rejection below. The concept of quantization is considered to be inherent in the art of MPEG video encoding/decoding standard in that during the encoding of images, discrete cosine transform is performed to differentiate the DC coefficients and the AC coefficients, then the quantization is applied to quantize the video data (ie.DC coefficients) into a format for preparation for variable length coding or entropy coding for transporting the compressed video data to the decoder terminal for high quality image display. Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. In figure 5, Yagasaki

discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems. Thus, Yagasaki also discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems. Thus, quantization and quantizers are inherent in MPEG video encoding standard. The concept of quantization and quantizers is not a patentable feature since MPEG encoding has been around long before the applicant filed this current patent application.

Regarding lines 16-19 on page 8 of applicant's remarks, applicant states that there is no relationship between the accuracy of the motion coefficients and the operation of a prediction error quantizer. The examiner respectfully disagrees.
In figure 2, Nieweglowski discloses from figure 1, element 3 is the motion field coding section that produces the "motion coefficients" that are multiplexed and sent to the decoder of figure 2, where element 21 obtains the motion coefficient data of the picture segment data. Nieweglowski's figure 5 discloses a motion field coder with quantization or QR values determined. See line 14 on page 8 to line 9 on page 9. Thus, Nieweglowski discloses determining the prediction error quantizer, the motion coefficients representing the motion of a picture segment. Nieweglowski does not disclose determining an accuracy of the motion coefficients. However, in column 13, lines 24-36, Yagasaki asserts the determination of the range of the accuracy values of the motion vector data that comprises motion coefficients data, and that decoder shown in Yagasaki's figure 5 decodes the data as coded in the encoder embodiment of figure 4A-4B, and that figure 7 shows the degree of accuracy of motion vector S55, including

motion coefficient data, is included with the VLC coded data at output of element 17 of figure 4B along with the quantized data output (comprises the predicted error quantizer) of element 15 of figure 4A. Thus, Yagasaki teaches the determination of the accuracy of the motion coefficients, and Yagasaki also teaches the relationship between the accuracy of the motion coefficients and the operation of a prediction error quantizer.

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements, as suggested in Yagasaki's column 3, lines 54-61.

Regarding line 26 on page 8 to line 2 on page 9 of applicant's remarks, applicant states that Yagasaki does not disclose the matter of motion coefficients, of accuracy based on prediction error quantization. The examiner respectfully disagrees. In figure 2, Nieweglowski discloses from figure 1, element 3 is the motion field coding section that produces the "motion coefficients" that are multiplexed and sent to the decoder of figure 2, where element 21 obtains the motion coefficient data of the picture segment data. Nieweglowski's figure 5 discloses a motion field coder with quantization or QR

values determined. See line 14 on page 8 to line 9 on page 9. Thus, Nieweglowski discloses determining the prediction error quantizer, the motion coefficients representing the motion of a picture segment. Nieweglowski does not disclose determining an accuracy of the motion coefficients. However, in column 13, lines 24-36, Yagasaki asserts the determination of the range of the accuracy values of the motion vector data that comprises motion coefficients data, and that decoder shown in Yagasaki's figure 5 decodes the data as coded in the encoder embodiment of figure 4A-4B, and that figure 7 shows the degree of accuracy of motion vector S55, including motion coefficient data, is included with the VLC coded data at output of element 17 of figure 4B along with the quantized data output (comprises the predicted error quantizer) of element 15 of figure 4A. Thus, Yagasaki teaches the determination of the accuracy of the motion coefficients, and Yagasaki also teaches the relationship between the accuracy of the motion coefficients and the operation of a prediction error quantizer.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413,

208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding lines 7-10 on page 9 of applicant's remarks, applicant asserts that Nieweglowski and Yagasaki cannot be combined because there is no motivation to combine. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements, as suggested in Yagasaki's column 3, lines 54-61.

New claims 40-41 are rejected for reasons as stated below.

Thus, the rejection is maintained.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 33, 34, 37, 38 and 41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 33, 34, 37, 38 and

41 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor is positively tied to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. For example, in claims 33 and 37, the method including steps of "determining a prediction error" and "determining an accuracy" is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of "determining a prediction error" and "determining an accuracy" to limit the steps to the electronic form and the claim language itself is sufficiently broad to read on a printout.

Similarly, claims 34 and 38, the method including steps of "receiving information" is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of "receiving information" to limit the steps

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1 *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

2 *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

to the electronic form and the claim language itself is sufficiently broad to read on a printout.

Similarly, claim 41, the method includes the step “determining the accuracy” is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of “determining the accuracy” to limit the steps to the electronic form and the claim language itself is sufficiently broad to read on a printout.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.
>
> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).
>
> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 37-38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 37 defines "*a computer software program"* embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "*a computer software program*" can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 33-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nieweglowski (WO 97/16025) in view of Yagasaki (5,428,396).

Regarding claim 33, Nieweglowski discloses a method for decoding encoded video information, the method comprising:

determining a prediction error quantizer from encoded video information, the prediction error quantizer used to quantize prediction error transform coefficients (fig.2, Nieweglowski's element 22 determines the prediction error quantizer from the encoded video information as obtained from the encoder shown in fig.1, see page 2, lines 1-7); and

determining the prediction error quantizer, the motion coefficients representing the motion of a picture segment (fig.2, note, from fig.1, element 3 is the motion field coding section that produces the "motion coefficients" that are multiplexed and sent to the decoder of fig.2, where element 21 obtains the motion coefficient data of the picture segment data, and that fig.5 discloses a motion field coder with quantization or QR values determined, see line 14 on page 8 to line 9 on page 9).

Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Nieweglowski does not disclose determining an accuracy of the motion coefficients. However, Yagasaki teaches the determination of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Regarding claim 34, Nieweglowski discloses receiving information indicating a motion coefficient quantizer (fig.5, note the motion field coder discloses the "motion coefficient" data produced in motion field coder that includes data with quantization or QR values determined; see line 14 on page 8 to line 9 on page 9). Nieweglowski does not disclose determining the accuracy of the motion coefficients. However, Yagasaki discloses determining the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is

considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Regarding claim 35, Nieweglowski discloses a decoder for decoding encoded video information, the decoder comprising:

a demultiplexing unit for determining a prediction error quantizer from the encoded video information, the prediction error quantizer used to quantize the prediction error transform coefficients (fig.2, note the “multiplexer” used in Nieweglowski’s fig.2 suppose to function as a demultiplexer since the data obtained from the encoder of fig.1 has a multiplexer for sending data to the decoder embodiment of fig.2, clearly the “multiplexer” in fig.2 is a typo, and is suppose to be a demultiplexer since data obtained by the “multiplexer” or demultiplexer clearly demultiplexes or divide data into two components: encoded prediction error data sent to element 22 and motion data sent to element 21); and

a motion field coding block for determining the prediction error quantizer, the motion coefficients representing the motion of a picture segment (fig.2, note, from fig.1,

element 3 is the motion field coding section that produces the "motion coefficients" that are multiplexed and sent to the decoder of fig.2, where element 21 obtains the motion coefficient data of the picture segment data, and that fig.5 discloses a motion field coder with quantization or QR values determined, see line 14 on page 8 to line 9 on page 9).

Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Nieweglowski does not disclose determining an accuracy of the motion coefficients. However, Yagasaki teaches the determination of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Regarding claim 36, Nieweglowski discloses determining signaling information indicating a motion coefficient quantizer from to obtain the coefficients from the encoded video information (fig.5, note the motion field coder discloses the "motion coefficient" data produced in motion field coder that includes data with quantization or QR values determined; see line 14 on page 8 to line 9 on page 9). Nieweglowski does not disclose selecting the accuracy of the motion coefficients. However, Yagasaki discloses determining and selecting the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses

element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Regarding claim 37, Nieweglowski discloses a computer software program stored on a computer-readable medium, the software program causing the computer to perform a method for decoding encoded video information (fig.2 is the decoder),

determining a prediction error quantizer from the encoded video information, the prediction error quantizer used to quantize the prediction error transform coefficients (fig.2, Nieweglowski's element 22 determines the prediction error quantizer from the encoded video information as obtained from the encoder shown in fig.1, see page 2, lines 1-7); and

determining the motion coefficients based on the prediction error quantizer, the motion coefficients representing the motion of a picture segment (fig.2, note, from fig.1, element 3 is the motion field coding section that produces the "motion coefficients" that are multiplexed and sent to the decoder of fig.2, where element 21 obtains the motion coefficient data of the picture segment data, and that fig.5 discloses a motion field coder with quantization or QR values determined, see line 14 on page 8 to line 9 on page 9).

Although the term "quantizer" is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video

image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Nieweglowski does not disclose determining an accuracy of the motion coefficients. However, Yagasaki teaches the determination of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Regarding claim 38, Nieweglowski discloses receiving information indicating motion coefficient quantizer (fig.2, element 21 receives the motion coefficient quantizer information as encoded from fig.1, wherein fig.5, note the motion field coder discloses the "motion coefficient" data produced in motion field coder that includes data with quantization or QR values determined; see line 14 on page 8 to line 9 on page 9). Nieweglowski does not disclose determining the accuracy of the motion coefficients. However, Yagasaki discloses determining the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it

would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Although the term “quantizer” is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Regarding claim 39, Nieweglowski discloses an apparatus comprising a decoder for decoding encoded video information, wherein the decoder comprises:

an inverse quantization unit for determining a prediction error quantizer from motion coefficients of the encoded video information, the prediction error quantizer serving to quantize prediction error transform coefficients (fig.2, Nieweglowski’s element 22 determines the prediction error quantizer from the encoded video information as obtained from the encoder shown in fig.1, see page 2, lines 1-7, wherein element 22

must inherently discloses an inverse quantizer for inversely quantizing data as encoded by “Predictive Error Coding” from figure 1, as the use of quantizers and inverse quantizers are inherent in the art of MPEG); and

determining the prediction error quantizer, the motion coefficients representing the motion of a picture segment (fig.2, note, from fig.1, element 3 is the motion field coding section that produces the “motion coefficients” that are multiplexed and sent to the decoder of fig.2, where element 21 obtains the motion coefficient data of the picture segment data, and that fig.5 discloses a motion field coder with quantization or QR values determined, see line 14 on page 8 to line 9 on page 9).

Although the term “quantizer” is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Nieweglowski does not disclose a further quantization unit for determining an accuracy of the motion coefficients. However, Yagasaki teaches the determination of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the

determination of the range of the accuracy values of the motion vector data that contains motion coefficients data). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Regarding claim 40, Nieweglowski does not disclose comprising a connection from the decoder to the further quantization unit for communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients. However, Yagasaki teaches the connection from the decoder to the further quantization unit for communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data, and wherein fig.5, Yagasaki discloses there is two-way communication between the decoder 52 and the quantization unit 55, wherein the quantization parameter information is extracted for obtaining the prediction error quantizer data from the encoded video data so that the accuracy of the motion vector data that contains motion coefficients data can be ascertained). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Although the term “quantizer” is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Regarding claim 41, Nieweglowski does not disclose wherein, in the determining of the accuracy of the motion coefficients, there is a communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients. However, Yagasaki teaches wherein, in the determining of the accuracy of the motion coefficients, there is the communication of information of the prediction error quantizer from the encoded video information for use in the determining of the accuracy of the motion coefficients (col.13, ln.24-36, Yagasaki discloses the determination of the range of the accuracy values of the motion vector data that contains motion coefficients data, and wherein fig.5, Yagasaki discloses there is two-way communication between the decoder 52 and the quantization unit 55, wherein the quantization parameter information is extracted for obtaining the prediction

error quantizer data from the encoded video data so that the accuracy of the motion vector data that contains motion coefficients data can be ascertained). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Nieweglowski and Yagasaki, as a whole, for accurately, efficiently encoding and decoding image data while maintaining high image quality and minimizing hardware requirements (Yagasaki col.3, ln.54-61).

Although the term “quantizer” is not explicitly stated in the Nieweglowski, however, in MPEG video encoding/decoding standard, the use of quantizers is considered an inherent feature, if not, then an extremely obvious feature since MPEG encoders/decoders are known to use DCTs and quantization parameters for encoding/decoding image data so as to properly encode/decode and transmit video image data for efficiently encoding, decoding and displaying video image data in an accurate manner. Yagasaki discloses the use of quantization for obtaining quantization parameter data in MPEG encoding/decoding systems (fig.5, note Yagasaki discloses element 55 is an inverse quantizer and that fig.4A, element 15 is the quantizer, thus, quantization is known to be used for MPEG encoding/decoding systems).

Contact Information

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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